

Appendix I
Octachlorostyrene Work Sheet

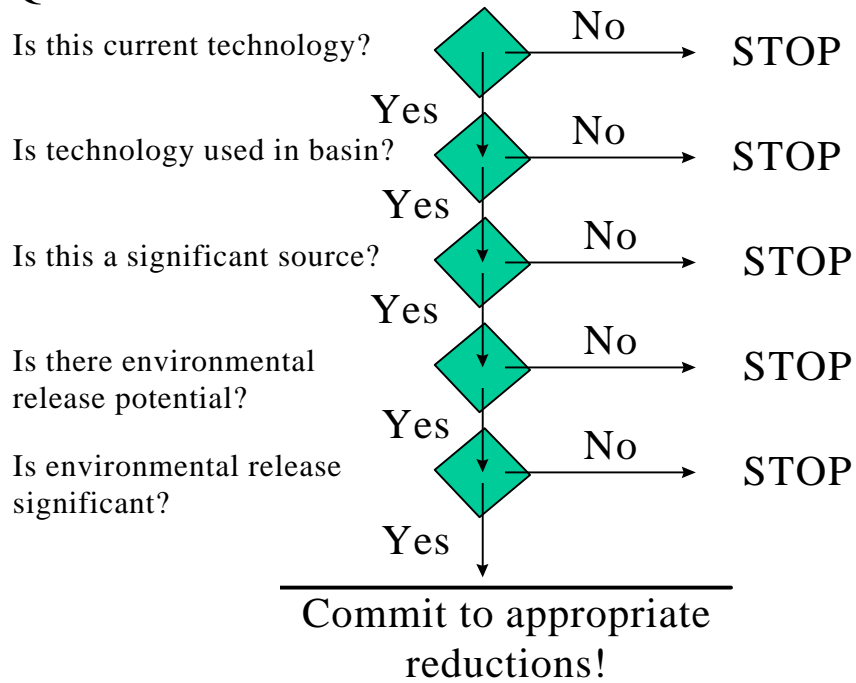
<u>Potential Sources of OCS</u>	<u>Current Technology</u>	<u>Basin Technology</u>	<u>Source Significant</u>	<u>Environmental Release Potential</u>	<u>Significant Release Potential</u>
Chlor-alkali production					
Graphitic electrodes	No	STOP			
Magnesium production					
Graphitic electrodes	Yes	No	STOP		
Raw material chlorination					
PVC Incineration					
Medical wastes					
Municipal wastes	Yes	Yes	No	Stop	
Chlorinated solvent incineration					
Cement kilns					
Haz. Waste incinerators	Yes	Yes	No	Stop Stop Stop	
Medical waste incinerators	Yes	Yes	No		
Municipal wastes incinerators	Yes	Yes	No		
Petroleum catalyst regen.					
PCB incineration					
Waste oil burning					
Auto fuel combustion	Yes	Yes	No	Stop	
Metal degreasing	Yes	Yes	N/A	No	STOP
Aluminum production					
Pri. - graphitic electrodes	Yes	Yes	No	STOP STOP	
- degassing with Cl ₂	Yes	Yes	No		
Sec. - Chlorinated coatings	No	STOP			STOP
- demagging with Cl ₂	Yes	Yes	No	STOP	

PVC coated wire recycling	Yes	Yes	No	Stop	
PVC polymerization/production	Yes	Yes	No	Stop	
Pesticides Manufacture					
Mono to tetrachlorophenol prod.	Yes	Yes	No	STOP	
Pentachlorophenol production					
Wood preservation	Yes	Yes	No	Stop	
Rare metals production					
Niobium extraction					
Tantalum extraction					
Pulp and Paper Making					
Chlorine bleaching	No	STOP			
Chlorinated solvent production					
High temp. chlorination	Yes	Yes	No	STOP	
Coke production	Yes	Yes	No	STOP	
Waste Sites					
Graphitic electrode disposal	N/A				
Electrolysis sludge disposal	N/A				
Incineration ash disposal	N/A				
Landfill fires	N/A				
Tire manufacturing	Yes	Yes	No	STOP	
dkp/3-8-98					

Appendix II

OCS Decision Tree

Questions:



Appendix III

Figures 1 - 12

Status and Trends of OCS In Great Lakes Media

Figure 1. First order decline (10% per year decrease) on linear XY plot

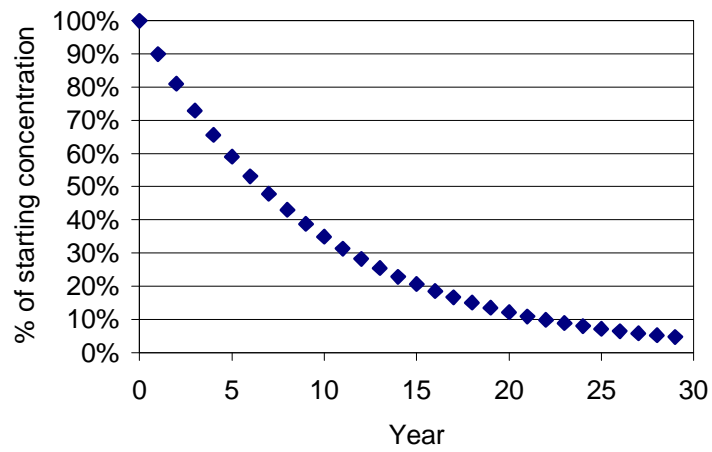


Figure 1. A first order decline graphed on the more usual linear XY plot.

Figure 2. First order decline (10% per year decrease) on semi-log XY plot

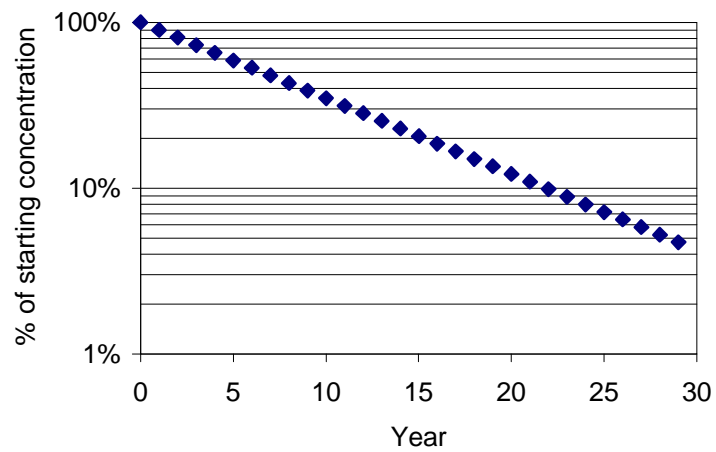


Figure 2. The same first order decline plotted on semi-log paper.

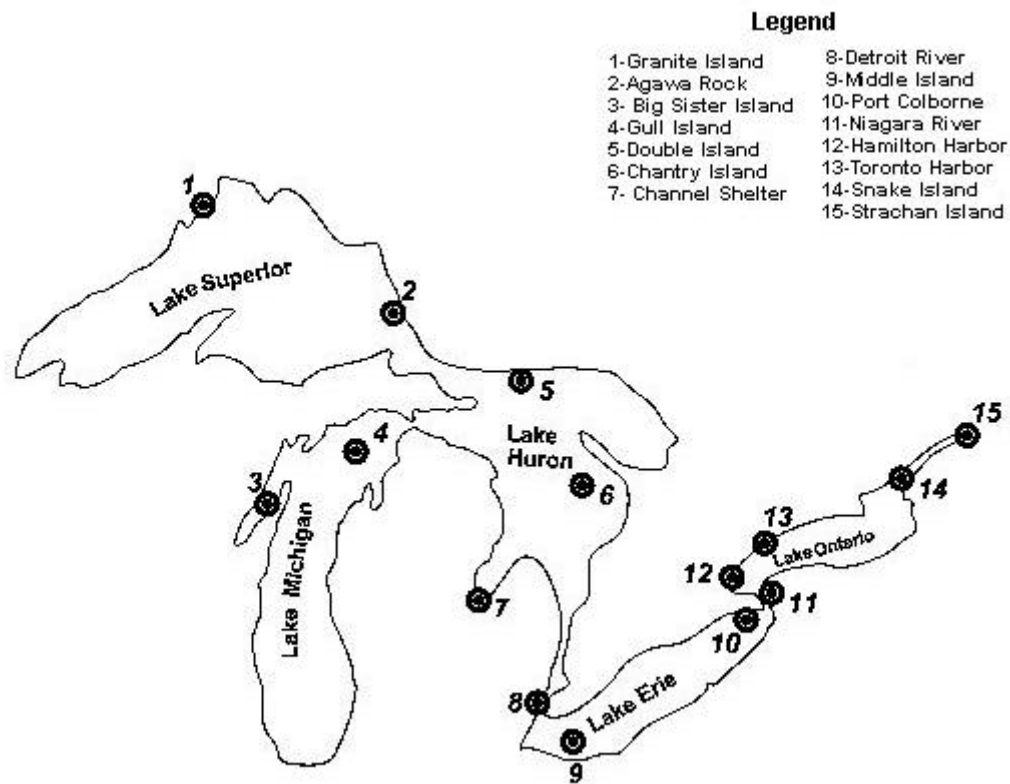


Figure 3. Location of Herring Gull colonies on the Great Lakes.

Figure 4. Yearly % Decline vs. Colony

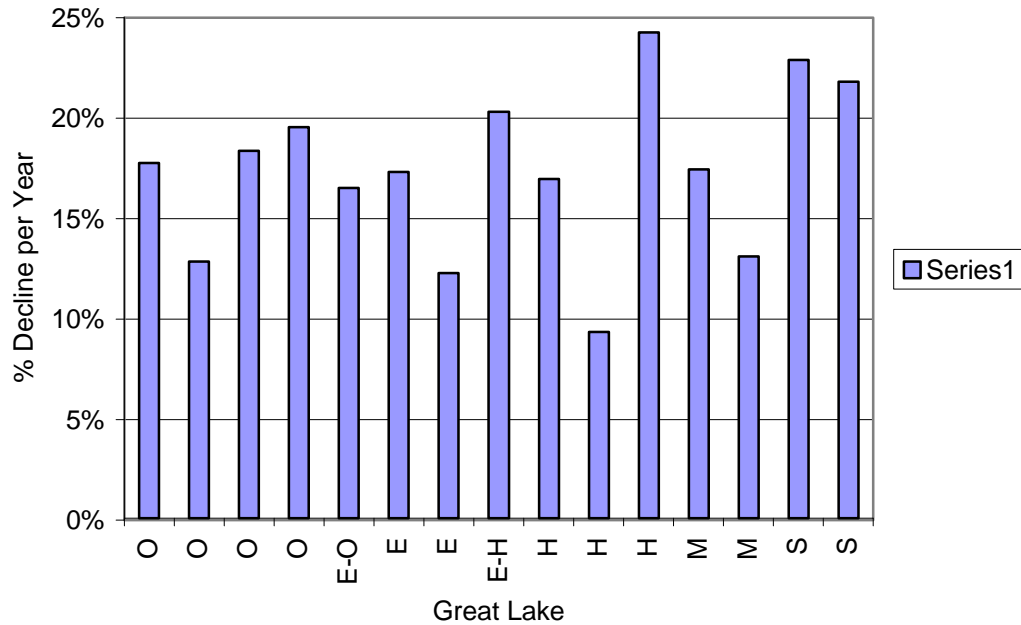


Figure 4. Best-fit % declines per year estimated from linear regression. Colonies are plotted in the following order which generally follow an east-west gradient: Lake Ontario colonies in the order of Strachan Island, Snake Island, Leslie Spit, Hamilton Harbor, Niagara River, Lake Erie colonies in the order of Port Colborne and Middle Island, Detroit River, Lake Huron colonies in the order of Channel Shelter Island, Chantry Island, and Double Island, Lake Michigan colonies with ?/ and ??, and Lake Superior colonies Agawa Rock and Granite Island.

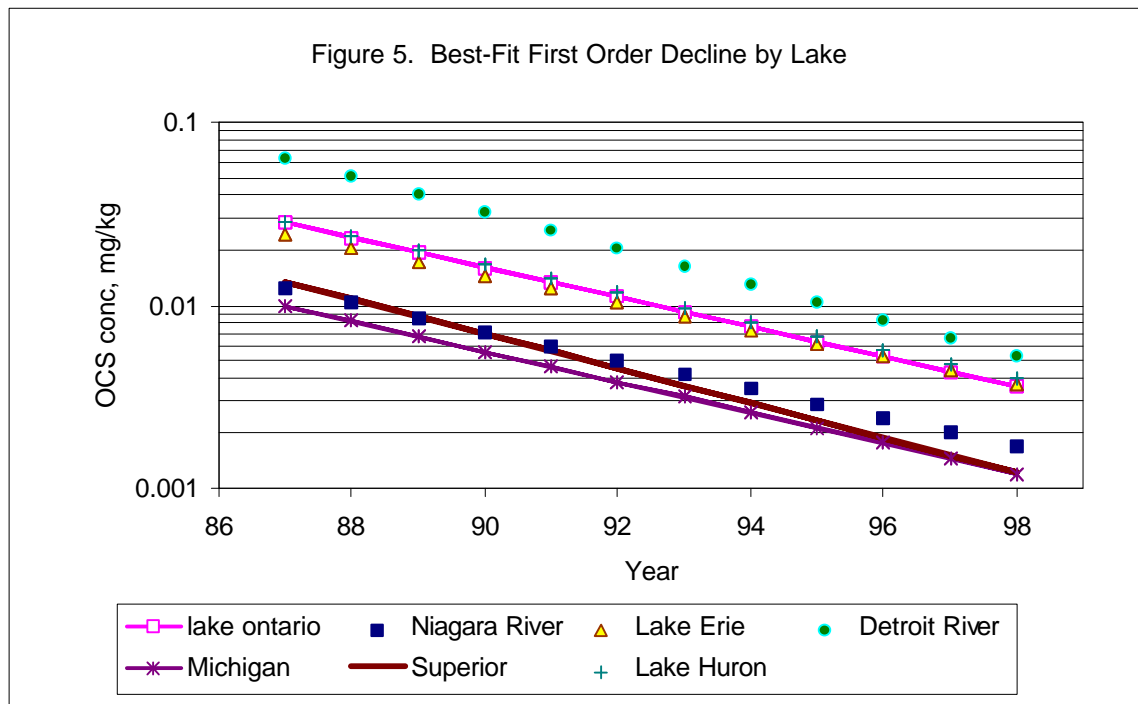


Figure 5. Best-fit declines of OCS in herring gull eggs grouped by Lake and Connecting Channel.

Figure 6. Mean OCS (94-98) versus Lake

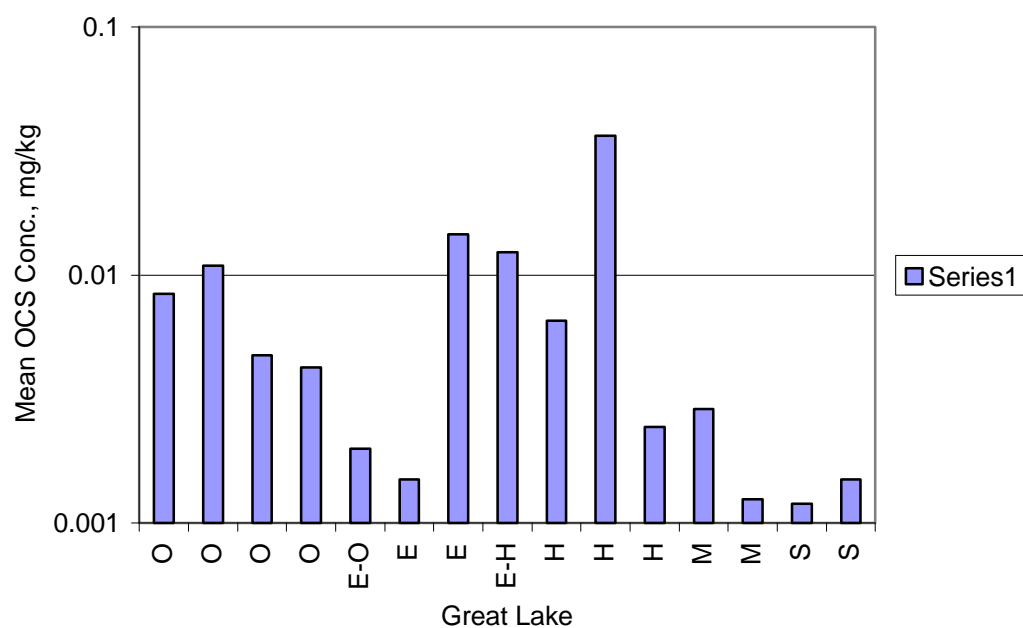


Figure 6. Most-recent (1994 to 1998) concentrations of OCS by colony. Sequence of colonies same as in Figure 6.

Figure 7. OCS in Spottail Shiners in Lower Niagara River (MOE Data)

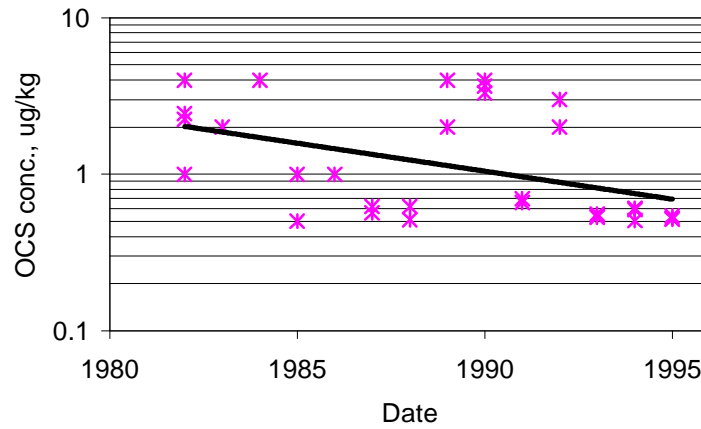


Figure 7. OCS concentrations in spottail shiners from the lower Niagara River. Values less than detection limit (1 ug/kg) set equal to 0.5 ug/kg. Some data points have been altered somewhat (e.g., 10% to 20%) to aid viewing when more than one sample on the same date had the same concentration.

Figure 8. Estimated whole water concentrations of OCS at
Niagara-on-the-Lake

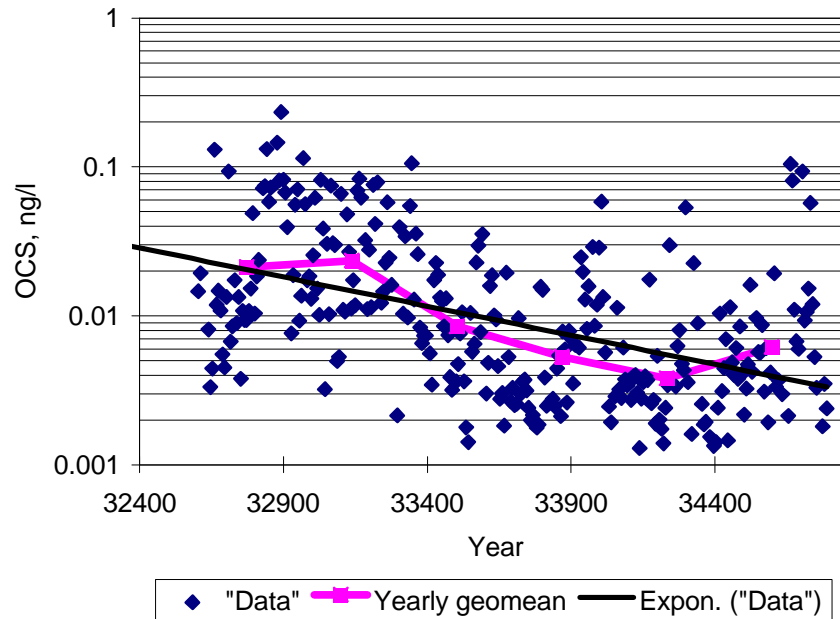


Figure 8. Concentrations of OCS in Niagara River water at the mouth of the Niagara River.

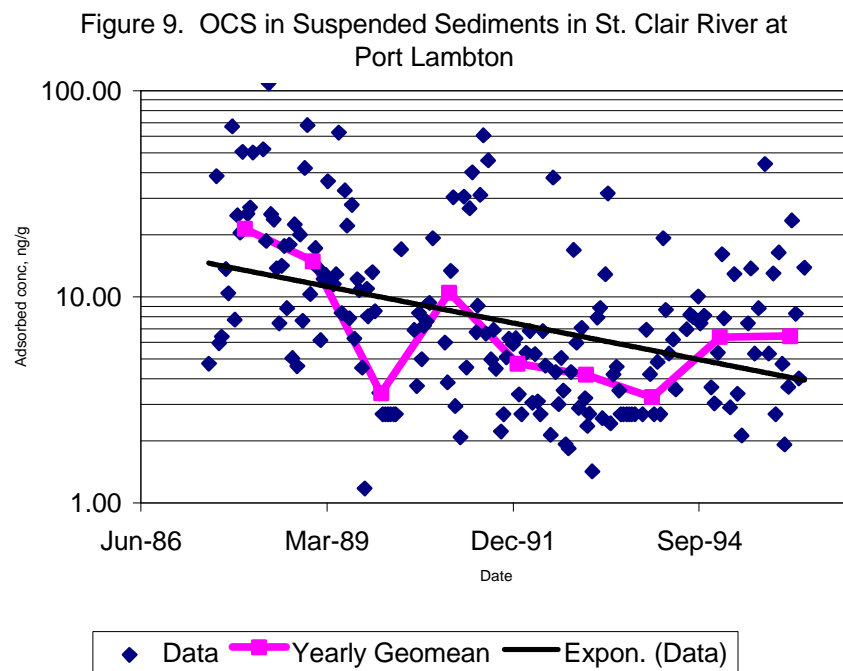


Figure 9. Concentrations of OCS on suspended particle from the St. Clair River at Port Lambton.

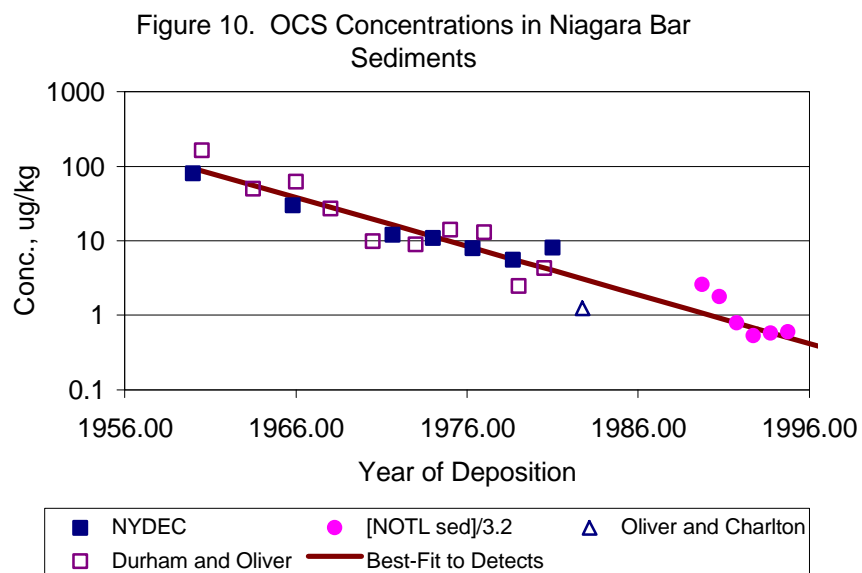


Figure 10. Concentrations of OCS in sediments from Lake Ontario. For the NYDEC sample, all analyses for sediments deposited between 1981 and 1995 were below the detection limit, but these data are not depicted on this graph.

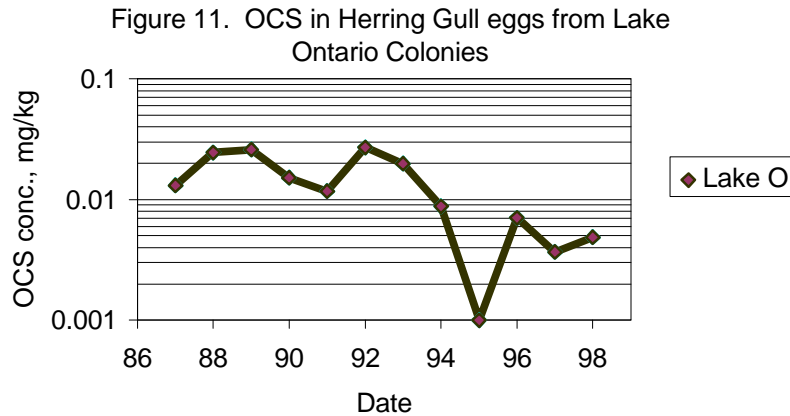


Figure 11. Mean concentrations of OCS in gull eggs from the four Lake Ontario gull egg colonies (Strachan Island, Snake Island, Leslie Spit, and Hamilton Harbor.)

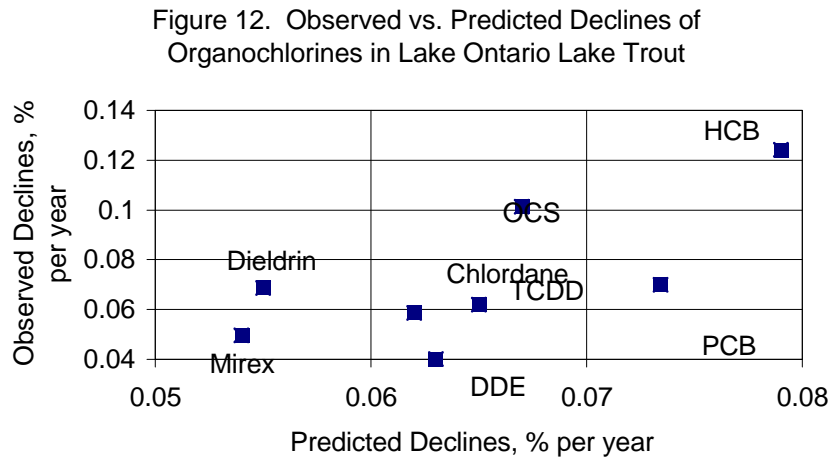


Figure 12. Observed versus predicted declines of different organochlorines in Lake Ontario lake trout. Predicted rates of decline (per year) from the Endicott et al. model (1992a) after cessation of loading. Observed rates are best-fit declines observed in lake trout, data from Huestis et al. (1996).

Appendix IV

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Status and Trends of OCS in Great Lakes Media

Dr. Daniel W. Smith

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Appendix V

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Appendix VI
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